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Foreign Documents Branch C I A Periodical Abstracts

23 Jul 1948

SCIENTIFIC

Number 58

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"Doklady Akademii Nauk SSSR, Novaya Seriya" (Reports of the Academy of Sciences of the USSR, New Series) Cards 8-10, 43, 44, 54-63, 78, 86-89	Vol LVII No 5	Aug 1947
"Doklady Akademii Nauk SSSR, Novaya Seriya" (Reports of the Academy of Sciences of the USSR, New Series) Cards 3-7, 26, 45, 50-53, 73-77, 84, 92-96, 98	Vol LVI No 6	May 1947
"Energeticheskii Byulleten'" (Energetics Bulletin) Cards 27-30	No 7	Jul 1947
"Khimicheskaya Promyshlennost'" (Chemical Industry) Cards 13-19	No 4	Apr 1947
"Khimicheskaya Promyshlennost'" (Chemical Industry) Cards 20-23, 41, 42	No 8	Aug 1947
"Nauka i Zhizn'" (Science and Life) Cards 1, 2, 31, 32, 97	No 10	Oct 1947
"Stal'" (Steel) Cards 33-35, 79, 80	No 6	Jun 1947
"Stal'" (Steel) Cards 36-40, 81-83, 85	No 7	Jul 1947

NOTE

In indexing these abstracts the following guides are used: MEDICINE - "Quarterly Cumulative Index Medicus," American Medical Association; CHEMISTRY - "Chemical Abstracts Subject Index," American Chemical Society; GENERAL - "Subject Headings for Technical Libraries," US Department of Commerce, Office of Technical Services.

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FDB Periodical Abstracts Scientific No 58

USSR/Academy of Sciences
Nuclear Physics - Research

Oct 1947

"Soviet Science in the Service of Its Country," S. I. Vavilov, Academician, 14 pp

"Nauka i Zhizn'" No 10

General account of how Soviet science has served USSR. Names P. A. Cherrenkov, Petrazhak, and Flerov as interested in nuclear physics; and such topics as automatic disintegration of uranium atom. Other scientists who have enriched Soviet knowledge include: N. M. Krymov in radio, I. M. Vinogradov in mathematics, and N. S. Kurnakov in physical chemical analyses. New Stalin Five-Year Plan has set great task for

FDB

58T1

USSR/Academy of Sciences (Contd)

Oct 1947

Academy of Sciences, USSR. New center planned for Academy of Sciences; A. V. Shchusev is architect for new structure.

USSR/Academy of Sciences
Chemistry - History

Oct 1947

"Thirty Years of Soviet Chemistry," Prof S. A. Pogodin, Dr Chem Sci, Assoc Prof Sci Engin, 4 pp

"Nauka i Zhizn'" No 10

General account of 30 years of development of chemistry in Soviet Union. Mentions names of scientists most responsible for great advances made in Soviet chemistry.

FDB

58T2

USSR/Aeronautics

May 1947

Velocity, Ultrasonic
Flow, Turbulent

"Turbulent Flow of Air Caused by the Vibrations of a Foil Moving at Supersonic Speeds," Ye. A. Krasil'-shchikova, 4 pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LVI, No 6

Examines linearized problem of vibrations of a fine deformed foil moving at supersonic speeds under normal conditions. Submitted by Academician L. S. Leybenzon, 1 Dec 1946.

FDB

58T1

USSR/Chemistry - Amides, Poly
Chemistry - Synthesis

May 1947

"The Formation of Three Dimensional Structure in Polyamides," V. V. Korshak, S. R. Rafikov, Inst Org Chem, Acad Sci, 4 pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LVI, No 6

Discusses study of so-called "stitching" of macromolecules from point of view of importance of use in technique to obtain new materials with technically valuable qualities and to improve quality of known products. Submitted by Academician A. N. Nesmeyanov, 20 Oct 1946.

FDB

58T4

USSR/Chemistry - Alloys
Chemistry - Systems, Ternary

May 1947

"Application of the Law of Mass Action to the Analysis of the Form of Elements Limiting Polythermal Volumes in Ternary Systems," V. I. Mikheyeva, 2 pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LVI, No 6

Describes results of an experiment in which isothermic models of alloy properties were constructed and placed in isoconcentrates with a constant solvent content. Submitted by Academician I. I. Chernyayev, 25 Oct 1946.

FDB

58T6

FDB

58T3

USSR/Chemistry - Zinc, Corrosion of
Chemistry - Electric Charges

May 1947

"Microgalvanic Elements on the Surface of Corroding Zinc," G. V. Akimov, Corr Mem, Inst Phys Chem, Acad Sci USSR; A. I. Golubev, All-Union Sci Res Inst Aviation Materials, 3 pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LVI, No 6

Describes experiments which give full confirmation of hypothesis made by De La Rive in 1830 on action of microelements.

FDB

58T5

USSR/Chemistry - Dyes, Triphenylmethane
Chemistry - Pyridine

May 1947

"Pyridine Analogues of Di- and Triphenyl Methane Dyes and Their Color," I. L. Khunyanys, Corr Mem; V. M. Berezovskiy, Inst Org Chem, Acad Sci, 4 pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LVI, No 6

Research designed to give final clarification of capacity of pyridine analogues of triphenyl methane dyes for forming coloring substances.

FDB

58T7

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FDB Periodical Abstracts Scientific No 58

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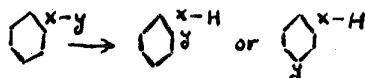
USSR/Chemistry - Phenols
Chemistry - Hydrogen

Aug 1947

"Hydrogen Regrouping in Phenols," A. I. Brodskiy, Corr Mem, Acad Sci USSR; G. P. Miklukhin, I. I. Kukhtenka, I. P. Gragerov, Inst Phys Chem imeni L. V. Pisarzhevskiy, Acad Sci USSR, 3 pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LVII, No 5

Indicates that certain reactions in aromatic compounds may be expressed as follows:



and studies the special case where $x = 0$ and $y = \text{H}$.

FDB

58T8

USSR/Chemistry - Sucrose
Chemistry - Sugar Beets

Aug 1947

"Daily Periodicity of the Absorption Ability in Plants and Its Relation to the Fermentative Synthesis of Sucroses," N. M. Sisakyan, A. M. Kobayakova, N. A. Vasil'yeva, Inst Biochem imeni A. N. Bakh, Acad Sci USSR, 1½ pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LVII, No 5

Describes experiments which lead to conclusion that roots of sugar beet possess capacity for intensive formation of sucrose after free invertase in them has been absorbed. Submitted by Academician A. I. Oparin, 20 Jan 1947.

FDB

58T10

USSR/Chemistry - Platinum Compounds
Chemistry - Isomers

Jan 1947

"The Formation of the Third Isomer of Ethylene-Ammonia-Chloride-Bromide Platinum," A. Gel'man, Ye. Gorushkina, Inst Gen and Inorg Chem imeni N. S. Kurnakov, Acad Sci USSR, 3 pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LV, No 1

Describes experiments in which it was found possible to synthesize third isomer of ethylene-ammonia-chloride-bromide platinum; possible only after forming a group of atoms with ethylene in a cation. Submitted by Academician I. I. Chernyayev, 3 Jul 1946.

FDB

58T12

USSR/Chemistry - Chemical Industry
Chemistry - Planning

Apr 1947

"In the Ministry of Chemical Industries," P. K., ½ p

"Khim Prom" No 4

College of Ministry of Chemical Industries convened in Mar 1947. Promotion of commodities produced by chemistry main topic of discussion. The 1946 plan completed 12.7% above norm. Plans to establish shops in Stalino, Molotov, Novosibirsk, and Moscow to handle chemical commodities.

FDB

58T14

USSR/Chemistry - Hydrolysis
Chemistry - Sulfonic Acids

Aug 1947

"Hydrolysis of Monosulfacids of Antraquinone," V. V. Kozlov, A. A. Egorova, Moscow Chem Tech Inst imeni D. I. Mendeleev, 3½ pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LVII, No 5

Describes hydrolysis of sulfonic acids with benzol and hydrolysis of sulfonic acids and their salts on being heated in solution of a mineral acid, and discusses difference between these and hydrolysis of monosulfacids of Antraquinone. Submitted by Academician V. M. Rodionov, 18 Jan 1947.

FDB

58T9

USSR/Chemistry - Phosphoric Acid, Dialkyl
Chemistry - Parachors

Jan 1947

"Parachor and Structure of Dialkylphosphoric Acid," B. A. Arbuzov, V. S. Vinogradova, Sci Res Chem Inst imeni A. M. Butlerov, Kazan State U, 2 pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LV, No 1

Describes experiments which produce data on parachors of dialkylphosphoric acid, fully confirming results on polymerizing ability of this acid in liquid condition.

FDB

58T11

USSR/Chemistry - Cooling Apparatus
Chemistry - Sulfuric Acid

Apr 1947

"Contemporary Makes of Sulfuric Acid Coolers," M. A. Gurfinkel', Engr, GipromKhim, 1 p

"Khim Prom" No 4

Describes common types of sulfuric acid coolers: pipe type for oil of vitriol, pipe within pipe cooler, methods for improving apparatus and construction of sprinkler-type coolers, and utilization of water containing chromates.

FDB

58T13

USSR/Chemistry - Chlorides
Chemistry - Nitrates

Apr 1947

"Topochemical Conversion of Sodium Chloride and Potassium Chlorides Into Nitrates," Prof D. A. Epshteyn, Dr Tech Sci; L. A. Chirkova, Candidate Chem Sci; I. N. Papulova, 5 pp

"Khim Prom" No 4

Describes results of studies on speed of interrelation of gaseous form and liquid form of nitrogen dioxide with solid chlorides, and studies which have been conducted on model apparatus. Data obtained for kinetic similarities, operated by chain reactions. No study of qualitative characteristics made.

FDB

58T15

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FDB Periodical Abstracts Scientific No 58

RESTRICTED

USSR/Chemistry - Chemical Industry
Chemistry - Acetaldehyde

Apr 1947

"Industrial Method of Producing Acetaldehyde," N. M. Putov, Engr, 4 pp

"Khim Prom" No 4

Various methods used to produce acetaldehyde, industrial raw material used in manufacture of acetic acid. Describes process of catalytic dehydration, oxidizing process of dehydration, manufacture of acetaldehyde from acetylene, hydration of acetylene in liquid state, hydration of acetylene in vapor state, and hydrolysis of simple vinyl ethers.

FDB

58T16

USSR/Chemistry - Chemical Industry
Chemistry - Tar, Derivatives

Apr 1947

"It Is Important to Pay Attention to the Tar Economy," P. V. Kuritsyn, Engr, Commodities Sec, MKhP, SSSR, 1 p

"Khim Prom" No 4

Brief description of general organization of work dealing with tar derivatives. Most organizing in plants under jurisdiction of Main Administration of GlavKhim Plast. Author recommends even better organization of work to cut down waste.

FDB

58T18

USSR/Chemistry - Gases
Chemistry - Heat, Transfer

Aug 1947

"The Effect of the Processes of Transfer of Heat and Matter on the Speed of Contact Reactions," G. K. Boreskov, Dr Chem Sci, 5 $\frac{1}{2}$ pp

"Khim Prom" No 8

Discusses basic laws governing processes of transfer between gas flow in channels formed by grains of the contact mass and outer surfaces of these grains. Shows application of these principles to some catalytic reactions. Discusses various gases; ammonia, phenol, naphthalene, in connection with this process.

FDB

58T20

USSR/Chemistry - Linseed Oil
Chemistry - Isomerization

Aug 1947

"Isomerization of Linseed Oil in the Presence of Metals," A. A. Ivanova, A. S. Petrova, Candidates Chem Sci, 1 $\frac{1}{2}$ pp

"Khim Prom" No 8

In recent years research has been concerned with isomerization of linseed and other oils to find a substitute for tung oil. Author presents in tabular form, with accompanying explanation, a series of tests conducted on linseed oil, with respect to isomerization in presence of metals. Zinc, calcium, mercury, tin, and several others found to give favorable results.

FDB

58T22

USSR/Chemistry - Chemical Industry
Chemistry - Planning

Apr 1947

"For Complete Fulfillment of the 1947 Plan," A. S. Shapiro, Engr, Ministry Chem Industries USSR, 2 pp

"Khim Prom" No 4

In 1946 production exceeded production for 1945 by 11.4%. Plans for 1947 call for even greater production in all lines of chemical industry. On basis of 1946 production, percentage increase for 1947 must reach: 55% for phosphorous fertilizers, 17% for nitrogen fertilizers, 30.2% for synthetic dyes, 26.3% for agricultural poisons, and 11% for paints and varnishes. This will cost about 302 million rubles, or some 10.8% more than in 1946.

FDB

58T17

USSR/Chemistry - Agricultural Chemistry
Chemistry - Fertilizers

Apr 1947

"Let Us Increase Production and Raise the Quality of Mineral Fertilizers and Chemists for the Agricultural Economy," M. G. Pervukhin, Minister Chem Industries USSR, 4 pp

"Khim Prom" No 4

Urges all workers in agricultural chemistry to fulfill requirements of first postwar Five-Year Plan. Gives very few production figures, most amounts being in percentages based on prewar production.

FDB

58T19

USSR/Chemistry - Vinegar, Acid
Chemistry - Artificial Materials

Aug 1947

"Review of 'Synthetic Vinegar Acid,' by S. N. Kazarovskiy and L. A. Kuznetsov," A. Petrov, Corr Mem, Acad Sci USSR, 1 p

"Khim Prom" No 8

Book covers five main points: 1) methods of obtaining and properties of synthetic vinegar acid; 2) obtaining acetylene from carbides and hydrocarbons; 3) methods of obtaining acetaldehyde; 4) synthesis of vinegar acid by means of oxidizing acetaldehyde; 5) important products of synthetic vinegar. Monograph has many errors but presents good description of basic technology of synthesis of vinegar acid.

FDB

58T21

USSR/Chemistry - Sulfuric Acid
Chemistry - Absorption

Aug 1947

"Absorption of Sulfuric Acid Vapor by Sulfuric Acid," F. I. Cherepkov, Candidate Tech Sci, NIUIF, 2 pp

"Khim Prom" No 8

Discusses purification of gases in tower sulfuric acid installations, particularly separation of sulfuric acid fumes. Describes results of experiments conducted to determine conditions necessary for absorption of sulfuric acid fumes by sulfuric acid, where vapor content in gas medium does not depend on various factors put forth by Gay-Lussac.

FDB

58T23

RESTRICTED	FDB Periodical Abstracts Scientific No 58	RESTRICTED	
USSR/Electricity Electrolysis Gases "Electrolysis During Successive Passage of Current Through Gaseous and Liquid Phase. New Type of Electrolysis in a Neutral Medium (Distilled Water)," V. I. Pavlov, 3½ pp "Dok Akad Nauk SSSR, Nova Ser" Vol LV, No 1 Describes experiments showing that ions of a given gas pass through a layer of a given solvent and can, as a consequence, exist in it. Submitted by Academician V. G. Khlopin, 8 Jul 1947.	Jan 1947	USSR/Electricity Conductivity Lead Sulfide "Measurements of the Resistance of PbS at Roughly Absolute Zero Temperature," Yu. A. Dunayev, 3 pp "Dok Akad Nauk SSSR, Nova Ser" Vol LV, No 1 Describes experiments which led to conclusion that PbS is not a semiconductor in classic sense, that perforated and electronic PbS behave similarly at low temperatures, and that superconductivity is not evident in PbS. Submitted by Academician A. F. Ioffe, 7 Aug 1946.	Jan 1947
FDB	58T24	FDB	58T25
USSR/Electricity Cathodes, Oxide Atomization "Atomization of Oxide Cathodes in Mercury Vapor Discharges," N. D. Morgulis, Ya. L. Lyubarskiy, Kiev State U, 4 pp "Dok Akad Nauk SSSR, Nova Ser" Vol LVI, No 6 Describes experiments which establish existence of atomization of oxide cathode in a mercury discharge. Shows that effect may not be noticeable for a long time because of complete concealment of cathode generation which occurs at same time. Submitted by Academician S. I. Vavilov, 25 Dec 1946.	May 1947	USSR/Electricity Transmission Lines Poles "Electric Transmission Lines of Metal Posts Made of Bore Tubes," S. A. Kurtsman, MinNeftPromVostok, 4½ pp "Energeticheskiy Byulleten'" No 7 During last war there was a serious lack of lumber for electrical power lines. Discusses use of bore tubes for oil wells, which unsuited for use in oil wells, could be utilized as supports for carrying power lines. These lines carried 35 kw. Gives different methods by which these pipes were utilized.	Jul 1947
FDB	58T26	FDB	58T27
USSR/Electricity Motors, Electric Efficiency, Industrial "Increasing the Coefficient of Capacity at Petroleum Industries," N. Z. Mastayev, MEI, 4 pp "Energeticheskiy Byulleten'" No 7 Presents methods to increase coefficient of capacity $\cos \phi$: 1) selection of capacity of asynchronous engines and transformers; 2) selection of type of asynchronous engine; 3) utilization of synchronous engines. Suggests that MEP should be urged to produce a series of various static condensers, one of the most effective methods of increasing coefficient $\cos \phi$.	Jul 1947	USSR/Engineering Engines, Diesel Efficiency, Industrial "Work in the Field of Increasing the Efficiency of Operations of Foreign Diesels," V. V. Myagkov, M. M. Khushulyan, Dizel'MontazhNeft', 5 pp "Energeticheskiy Byulleten'" No 7 After period of operation it was possible to determine certain operational defects of foreign-made Diesel engines installed in industries of Soviet Union. Discusses common breakdowns and methods of control of following makes of Diesels: four-cycle noncompression Deitz; vertical four-cycle noncom-	Jul 1947
FDB	58T28	FDB	58T29
USSR/Engineering Fuel - Conservation Efficiency, Industrial "Fuel Economy Through Combining the Processing of Thermal and Electrical Energy," I. I. Ivanov, MinPuteySoobshcheniya, 6½ pp "Energeticheskiy Byulleten'" No 7 Shows relationship between degree of fuel economy, realized in a combined installation, and structure of energy utilization. This can be characterized by relationship between utilization of thermal or electrical energy.	Jul 1947	USSR/Engineering (Contd) pression Ingersoll-Rand; vertical two-cycle non-compression Clark; and the vertical four-cycle non-compression Worthington.	Jul 1947
FDB	58T30	FDB	58T29

RESTRICTED		FDB Periodical Abstracts Scientific No 58		RESTRICTED	
USSR/Engineering Industrial Statistics		Oct 1947	USSR/Engineering Industrial Statistics		Oct 1947
"Facts and Figures" 2 pp			"Technical Re-equipping of the USSR People's Economy for Thirty Years," Prof A. A. Zvorykin, L. V. Zubkov, 13 pp		
"Nauka i Zhizn'" No 10			"Nauka i Zhizn'" No 10		
During first Five-Year Plans, 1,500 industries put into operation. First 3 years of Third Plan brought 2,900 industries into operation. During same period, 51 million tons of coal were mined, producing 2,400,000 kw electrical power, 2,900,000 tons of pig iron. Soviet production amounted to 361 million rubles in period 1942-1944. In 1942, 7 turbogenerators put into operation, general power 10,300 kw. Magnitogorsk, Kuznets, and Makeyev metallurgical			In First Five-Year Plan Soviet industries multiplied some eight times (US in the same period expanded only 50%). General account of the rapid strides made in Soviet industry. No exact production figures, but gives comparisons in terms of percentages. Series of photographs show industrial might of USSR. Views show Volkhovsk Hydroelectric Plant imeni V. I.		
FDB		58T31	FDB		58T32
USSR/Engineering (Contd)		Oct 1947	USSR/Engineering (Contd)		Oct 1947
plants produced 1,175 to 1,250 tons of metal in 1940. Many metallurgical plants have been started. One of big ones is "ElektroSil" Works. Pechor coal basin will be producing 7,700,000 tons of coal by 1950. Mentions discovery of new dielectric substances like styrol, titanium dioxide, eskapon, and elegaz.			Lenin, Nevinnomysskiy Canal with a view of causeway. Several views of steel plants, among them a shoreward view of AzovStal' Metallurgical Works; several photographs of factory equipment, e.g., a super die press at the UralMashZavod.		
FDB		58T31	FDB		58T32
USSR/Engineering Metallurgy, Ferrous Industrial Equipment		Jun 1947	USSR/Engineering Metallurgical Plants Dolomite		Jun 1947
"Automatics in the Service of Ferrous Metallurgy" 2 pp			"Dolomite Bricks in Metallurgy," Prof G. V. Kukolev, Dr Tech Sci; D. I. Kivin, Engr, All-Union Inst Fireproof Materials, 5 pp		
"Stal'" No 6			"Stal'" No 6		
According to schedules set up by new Five-Year Plan, ferrous metallurgy industry must exceed prewar production by 35%. Therefore, it is necessary to install automatic equipment and machinery wherever possible. Article is very general.			Use of dolomite bricks in important elements of furnaces was unsatisfactory because of their shrinkage and deformation due to high temperatures. From experiments, high-quality, water-resistant dolomite brick developed to replace magnesium and chrome-magnesium bricks. New brick will effect on quantity		
FDB		58T33	FDB		58T34
USSR/Engineering Metallurgical Plants Furnaces, Metallurgical		Jun 1947	USSR/Engineering (Contd)		Jun 1947
"Review of 'Construction, Equipment and Operation of Present-Day Dome-Furnace Plants' by Prof V. A. Sorokin," L. Ya. Ostroukhov, Leningrad Polytech Inst, 1 p			and quality of steel casting for present Five-Year Plan, since dolomite resources are available at almost all metallurgical processing areas.		
"Stal'" No 6					
Collection of articles, by various authors, dealing with construction, equipment, and operation of present-day dome-furnace plants in USSR. Reviewer states that although worthwhile, book would have been improved had Sorokin limited himself to discussing subject material he had intended to discuss.					
FDB		58T35	FDB		58T34

RESTRICTED	FDB Periodical Abstracts Scientific No 58	RESTRICTED	
USSR/Engineering Water Systems Water Softeners "Stabilization of Industrial Water," I. E. Apel'tsin, Candidate Tech Sci, Inst VodGeo, 7 pp "Stal'" No 7 Determination of stability of industrial water, characterized by its inability to precipitate or dissolve calcium carbonate, as well as impossibility of making an exact account of the reagents for its stabilization, is very important in plant economy. Stabilization of water prevents formation of active carbonic acid which corrodes metal and concrete, and prevents formation of calcium carbonate deposits on water pipes. FDB 58T36	Jul 1947	USSR/Engineering Metallurgical Plants Zinc "Control of the Bad Effects of Zinc at the Kuznets Works," M. V. Lugovtsov, Active Mem, Acad Sci USSR; A. A. Sigov, Candidate Tech Sci, Inst Ferrous Metallurgy, Acad Sci USSR, 3 pp "Stal'" No 7 Kuznets Combine has changed over to smelting local ores which have a very high zinc content. Results: 1) it increased cost of dome-furnace shafts; 2) greatly decreased amount of zinc concentrate in ore, which is processed by flotation. Discusses method FDB 58T37	Jul 1947
USSR/Engineering Metallurgical Plants Oxygen "Changing Oxidization Zones by Enriching Air Blasts With Oxygen," Docent I. Z. Kozlovich, Leningrad Polytech Inst, 6 pp "Stal'" No 7 Studies of state of gas in oxidizing zones of hearth of large dome-furnaces showed that with an increase of oxygen content in air blast, size of oxidizing zone decreases. Focus of combustion approaches the tuyere, and carbon monoxide content increases. Measurement of temperature in oxidizing zone shows that temperature rises with an increase of concentration of oxygen in blast. FDB 58T38	Jul 1947	USSR/Engineering (Contd) of using metal shafts for dome-furnaces as means of escaping disintegrating effects of zinc. FDB 58T37	Jul 1947
USSR/Engineering Metallurgical Plants Machinery "Greater Mechanization in Metallurgy" 4 pp "Stal'" No 7 Gives examples to show that mechanization of processes in metallurgical plants makes personnel available for other duties. Urges all metallurgical industries to introduce as much mechanization as possible to fulfill requirements set out in present Five-Year Plan. Article is very general. FDB 58T39	Jul 1947	USSR/Engineering Metallurgy, Ferrous Water Systems "The Techniques of Water Supply for Ferrous Metallurgy During the New Stalin Five-Year Plan," A. F. Shabalin, Candidate Tech Sci, MChM, 2 pp "Stal'" No 7 Discusses need for reconstruction of water distribution networks to assure good water supply for all processes and operations in ferrous metallurgy industries. During war, water systems were installed with a minimum of channels and pipes, thus making difficult an efficient water supply. FDB 58T40	Jul 1947
USSR/Engineering Metallurgical Plants Furnaces, Metallurgical "Reconstruction of Muffle Furnaces in Zinc-Oxidizing Plants," N. A. Kozulin, Engr, 2 pp "Khim Prom" No 8 Briefly describes calculations made before reconstruction operations were undertaken to muffle furnaces, for processing zinc at lacquer and paint industries, in order to increase efficiency of furnaces. FDB 58T41	Aug 1947	USSR/Engineering Remote Control Systems Telemechanics "Remote Control Apparatus, Built on the Principle of Dynamic Compensation," Docent F. Ye. Temnikov, Candidate Tech Sci, MEI imeni V. M. Molotov, 5 pp "Khim Prom" No 8 In 1934 author helped develop a method of compensating measurements, which enlarged field for solution of problems in automatics and telemechanics. Essentially this system based on fact that cyclic moments are brought into operation by equalizing forces. These moments vary in well-defined order, within FDB 58T42	Aug 1947

RESTRICTED	FDB Periodical Abstracts Scientific No 58	RESTRICTED	
USSR/Geology Fossils	Aug 1947	USSR/Engineering (Contd) Aug 1947	
"Comparison of the Foraminiferous Layers of the Northern Caucasus With the Nummulite Layers of Africa," N. N. Subbotina, All-Union Petroleum Sci Res Geol Prospecting Inst, 3 pp		possible limits of measured values, with no stoppage in operation of input systems. Authors called this, "Method of Dynamic Compensation." Explains basic operation of this control system.	
"Dok Akad Nauk SSSR, Nova Ser" Vol LVII, No 5			
Describes investigations and research which show that five microfaunistic zones in Northern Caucasus correspond to nummulite layers developed in Morocco. Submitted by Academician S. I. Mironov, 1 Mar 1947.			
FDB	58T43	FDB	58T42
USSR/Geology Chemical Tests	Aug 1947	USSR/Geology Geological Prospecting Minerals	May 1947
"Characteristics of Residual Crystallization in the October (Mariupol) Alkaline Mountain Range," I. D. Tsarovskiy, Inst Geol Sci, Acad Sci USSR, 2 1/2 pp		"Certain Peculiarities in the Chemical and Mineralogical Composition of Kazan Strata in the Southeast of the Tatar ASSR," V. P. Florenskiy, V. I. Bratash, 4 pp	
"Dok Akad Nauk SSSR, Nova Ser" Vol LVII, No 5		"Dok Akad Nauk SSSR, Nova Ser" Vol LVI, No 6	
In October Range, formation of alkaline complex occurred in two directions: appearance of a general reduction of SiO ₂ , and an unchecked increase of alkali, especially of Na. Presents graph showing change in ratio of Na:K, and discusses results. Submitted by Academician D. S. Belyankin, 1 Mar 1947.		Describes geological research in Tatar ASSR which shows that distribution of carbonates in Kazan' layer confirms presence of differentiated series; and indicates that among carbonates, dolomite is found in greater quantity than calcium. Submitted by Academician D. S. Belyankin, 24 Dec 1946.	
FDB	58T44	FDB	58T45
USSR/Geology Geological Prospecting Bauxite	Jan 1947	USSR/Geology Minerals	Jan 1947
"The Genesis of Bauxite in the Northwest Region of the Nikopol Dnepr Area," V. A. Perederiyev, Dnepropetrovsk Mining Inst imeni Artem, Ukraine Geol Adm, 4 pp		"Alkaline Metasomatism in the Region of the Ukraine Crystalline Mountain Range," V. I. Luchitskiy, 3 pp	
"Dok Akad Nauk SSSR, Nova Ser" Vol LV, No 1		"Dok Akad Nauk SSSR, Nova Ser" Vol LV, No 1	
Analyzes composition of bauxite in Northwest region of Nikopol Dnepr area. Advocates further geological research in this area and in similar geological and geochemical conditions at Pobuzh' and Krivorozh'.		Describes experiments which show that genesis of sodium metasomatism is basically connected with alkaline magmata in which effect of migration takes place slowly.	
FDB	58T46	FDB	58T47
USSR/Geophysics Ionosphere	Jan 1947	USSR/Geophysics Solar Studies	Jan 1947
"The Sporadic Layer of F ₂ in the Ionosphere," Ya. L. Al'pert, Phys Inst imeni P. N. Lebedev, Acad Sci USSR, 2 pp		"Possible Connection Between Twilight and Solar Activity," N. M. Shtaupe, Inst Astron and Phys, Kazakhstan Acad Sci USSR, Alma-Ata, 3 pp	
"Dok Akad Nauk SSSR, Nova Ser" Vol LV, No 1		"Dok Akad Nauk SSSR, Nova Ser" Vol LV, No 1	
Describes experiments in which ionosphere characteristics appear to consist of a number of tails with diffused branches. Caused by double refraction taking place both in basic F ₂ layer and in semitransparent sporadic layers of cloud structure in this layer. Submitted by Academician N. D. Papaleksi, 16 Sep 1946.		Describes photometric investigation of twilight, made by author at Alma-Ata in winter of 1945-1946, which coincided with extremely active sunspots. Further research revealed close connection between two phenomena. Submitted by Academician S. I. Vavilov, 22 Aug 1946.	
FDB	58T48	FDB	58T49

RESTRICTED		FDB Periodical Abstracts Scientific No 58		RESTRICTED	
USSR/Hydrology Water, Underground May 1947		USSR/Hydrology Water, Underground May 1947		USSR/Hydrology Water, Underground May 1947	
"The Chemical Zoning of Subterranean Waters in the Central Volga Region," T. P. Afanas'yev, Lab Hydrogeol Prob imeni F. P. Savarenskiy, Acad Sci USSR, 4 pp		"Hydrogeological Cycles," A. N. Semikhatov, 2 pp		"Hydrogeological Cycles," A. N. Semikhatov, 2 pp	
"Dok Akad Nauk SSSR, Nova Ser" Vol LVI, No 6		"Dok Akad Nauk SSSR, Nova Ser" Vol LVI, No 6		"Dok Akad Nauk SSSR, Nova Ser" Vol LVI, No 6	
Describes hydrogeological research and discusses experiments designed to tabulate degree of mineralization of subterranean waters in Central Volga Region. Submitted by Academician D. S. Belyankin, 24 Dec 1946.		Describes difficulty of reconstructing geological history of subterranean waters and of reconstructing initial composition of water and course of its changes under various types of chemical processes. Submitted by Academician P. I. Stepanov, 19 Dec 1946.		Describes difficulty of reconstructing geological history of subterranean waters and of reconstructing initial composition of water and course of its changes under various types of chemical processes. Submitted by Academician P. I. Stepanov, 19 Dec 1946.	
FDB USSR/Mathematics - Approximations May 1947 58T50		FDB USSR/Mathematics - Operational Theory May 1947 58T51		FDB USSR/Mathematics - Operational Theory May 1947 58T51	
"On One Limiting Case of the Approximation Theorem of Kronecker," A. Ya. Khinchin, Corr Mem, 4 pp		"On Defective Numbers of Closed Operators," M. A. Krasnosel'skiy, 2 pp		"On Defective Numbers of Closed Operators," M. A. Krasnosel'skiy, 2 pp	
"Dok Akad Nauk SSSR, Nova Ser" Vol LVI, No 6		"Dok Akad Nauk SSSR, Nova Ser" Vol LVI, No 6		"Dok Akad Nauk SSSR, Nova Ser" Vol LVI, No 6	
Following theorem is demonstrated: In order that system of equations, $t; x-y; -a; = 0$ possess a solution in entire (x, y) , it is necessary and sufficient to have the existence of a positive constant G such that in any entire (a, b) and proper selection the following inequality holds true: $ L_a(a) < G L_a(0) $		Two theorems are proved: For all $\lambda \in G$ of subspace N_λ there exists an identical dimension. Let A be a closed operator and G a region of a complex surface, which region consists of points regular for A ; then dimensions of supplements N orthogonal to L_λ in H are identical for all $\lambda \in G$. Submitted by Academician A. N. Kolmogorov.		Two theorems are proved: For all $\lambda \in G$ of subspace N_λ there exists an identical dimension. Let A be a closed operator and G a region of a complex surface, which region consists of points regular for A ; then dimensions of supplements N orthogonal to L_λ in H are identical for all $\lambda \in G$. Submitted by Academician A. N. Kolmogorov.	
FDB USSR/Mathematics - Equations, Differential Aug 1947 Mathematics - Functions 58T52		FDB USSR/Mathematics - Topology Aug 1947 58T53		FDB USSR/Mathematics - Topology Aug 1947 58T53	
"On Certain Local Proper Functions of Two Independent Variables," M. S. Areshev, 3 pp		"On a Problem of P. S. Aleksandrov," I. A. Vaynshteyn, 4 pp		"On a Problem of P. S. Aleksandrov," I. A. Vaynshteyn, 4 pp	
"Dok Akad Nauk SSSR, Nova Ser" Vol LVII, No 5		"Dok Akad Nauk SSSR, Nova Ser" Vol LVII, No 5		"Dok Akad Nauk SSSR, Nova Ser" Vol LVII, No 5	
Discusses existence of definite roots in equation $f(x, y) = 0$ in region of a certain point and problem of maximum and minimum in function $Z = f(x, y)$ for two cases where discriminant of second differential is identically zero. Submitted by Academician A. N. Kolmogorov.		General discussion of problem of reflections and closures of spaces in higher spaces. Submitted by Academician A. N. Kolmogorov.		General discussion of problem of reflections and closures of spaces in higher spaces. Submitted by Academician A. N. Kolmogorov.	
FDB USSR/Mathematics - Topology Aug 1947 58T54		FDB USSR/Mathematics - Series Mathematics - Transformations Aug 1947 58T55		FDB USSR/Mathematics - Series Mathematics - Transformations Aug 1947 58T55	
"On the Foundations of the Hilbertian Space," K. I. Babenko, 4 pp		"On Expressing the L-Series by the Zeta Function," Yu. V. Linnik, 3 pp		"On Expressing the L-Series by the Zeta Function," Yu. V. Linnik, 3 pp	
"Dok Akad Nauk SSSR, Nova Ser" Vol LVII, No 5		"Dok Akad Nauk SSSR, Nova Ser" Vol LVII, No 5		"Dok Akad Nauk SSSR, Nova Ser" Vol LVII, No 5	
Discussion of separable Hilbertian space H , whose basis is defined as $(X_k) \subset H$ and any element X of which $(X \in H)$ can be expressed as $X = \sum a_k x_k$ summed (where a_k are complex numbers). Submitted by Academician S. N. Bernshteyn.		Short discussion of simplest substitutions and transformations, as of Mellin, necessary in subject problem. Submitted by Academician I. M. Vinogradov.		Short discussion of simplest substitutions and transformations, as of Mellin, necessary in subject problem. Submitted by Academician I. M. Vinogradov.	
FDB 58T56		FDB 58T57		FDB 58T57	

RESTRICTED	FDB Periodical Abstracts Scientific No 58	RESTRICTED
USSR/Medicine - Cells Medicine - Water Supply Aug 1947 "The Action of Surface-Active Substances on the Intake of Water Into a Plant Cell," L. V. Mozhayeva, Agr Acad imeni K. A. Timiryazeva, 4 pp "Dok Akad Nauk SSSR, Nova Ser" Vol LVII, No 5 Describes experiments which show that active consumption of water is particularly strong in period of maximum growth of a cell and during stimulation of growth of heteroauxin. Submitted by Academician N. A. Maksimov, 1 Mar 1947.	USSR/Medicine - Trees Medicine - Minerals Aug 1947 "The Value of Shevyrev's Method for Plant Physiology," L. I. Sergeyev, Lab Plant Phys, State Nikitskiy Bot Garden imeni V. M. Molotov, 3 1/2 pp "Dok Akad Nauk SSSR, Nova Ser" Vol LVII, No 5 Shows that Shevyrev's method is most satisfactory means of introducing solutions of mineral and organic compounds into various forms of tree. Submitted by Academician N. A. Maksimov, 1 Mar 1947.	
FDB 58T58	FDB 58T59	
USSR/Medicine - Rodents Medicine - Taxonomy Aug 1947 "A New Type of Hare (Leporidae Rodentia) From Central Asia," A. A. Gureyev, 2 1/2 pp "Dok Akad Nauk SSSR, Nova Ser" Vol LVII, No 5 Describes new type of hare which has following characteristics: size of body smaller than Lepus Tolai Pall; hair straight and fine; auditory canal definitely larger than in all other known types. Submitted by Academician E. N. Pavlovskiy, 14 Feb 1947.	USSR/Medicine - Pituitary Body Medicine - Nervous System Aug 1947 "The Relation of the Development of Hypophysis and Its Thyrotropic Function to the Nerve Component in Amphibians," A. I. Irikhimovich, Inst Evolutional Morph imeni A. N. Severtsov, Acad Sci USSR, 4 pp "Dok Akad Nauk SSSR, Nova Ser" Vol LVII, No 5 Describes experiments which show that relation exists between hypophysis and its nerve section with regard to development of the glandular part of this organ and its thyrotropic function. Submitted by Academician I. I. Shmal'gauzen, 12 Feb 1947.	
FDB 58T60	FDB 58T61	
USSR/Medicine - Hearing Medicine - Reflex, Aural Aug 1947 "Certain Reactions Which Promote the Development of Subsensory Reflex Conditions Into Sound Irritations," I. I. Korotkin, Lab Physiol Sensory Organs, Physiol Inst imeni I. P. Pavlov, Acad Sci USSR, 3 pp "Dok Akad Nauk SSSR, Nova Ser" Vol LVII, No 5 Describes experiments which lead to conclusion that reactions in human nerve system caused by changes of aural sensitivity set up conditions favorable for development of subsensory reflex conditions. Submitted by Academician L. A. Orbeli, 13 Feb 1947.	USSR/Medicine - Skin Chemistry - Hydrolysis Aug 1947 "The Fermentative Hydrolysis of Skin Crystalalbumin," V. N. Orekhovich, A. A. Tustanovskiy, K. D. Orekhovich, Inst Biol Med Chem, Acad Med Sci USSR, Physiol Chem Lab, Acad Sci USSR, 3 pp "Dok Akad Nauk SSSR, Nova Ser" Vol LVII, No 5 Studies intensity of fermentative hydrolysis of skin crystalalbumin with various pH of the media, and gives a diagrammatic representation of its intensity with papain and cathepsin in relation to pH of media. Submitted by Academician Ya. O. Parnas, 10 Jan 1947.	
FDB 58T62	FDB 58T63	
USSR/Medicine - Soil Medicine - Fungi Jan 1947 "Distribution of Mold, Root Systems and Soil Invertebrates in the Soil of the Nut Forests of the Fergana Mountain Range," M. S. Gilyarov, Inst Evolutional Morph imeni A. N. Severtsov, 4 pp "Dok Akad Nauk SSSR, Nova Ser" Vol LV, No 1 Describes research on section of a nut (Juglandetum) forest having dense growth with predominance of nut trees type Impatiens Parviflora and Geranium and grass type Brachypodium Silvaticum. Submitted by Academician V. N. Sukachev, 5 Aug 1946.	USSR/Medicine - Wheat Medicine - Nutrition Jan 1947 "The Critical Nutrition Period in Winter Wheat Crops," A. G. Litovchenko, 2 1/2 pp "Dok Akad Nauk SSSR, Nova Ser" Vol LV, No 1 Describes research which shows that in order to avoid destructive action during critical nutrition period, crop must be sown with large and carefully selected grain; and regulated nutrition system is necessary for biological requirements of plant. Submitted by Academician A. A. Rikhter, 3 Aug 1946.	
FDB 58T64	FDB 58T65	

RESTRICTED		FDB Periodical Abstracts Scientific No 58		RESTRICTED	
USSR/Medicine - Heart Medicine - Pericardium		Jan 1947		USSR/Medicine - Anatomy Medicine - Animals	
"Formation of the Pericardium in the Region of the Base of the Heart in Higher Mammals and Humans From the Aspect of Evolutionary Morphology," V. N. Zhedenov, Veterinary Faculty, Odessa Agr Inst, 3 pp				"New Outlook on Cetaceous Gushers," A. G. Tomilin, 3 pp	
"Dok Akad Nauk SSSR, Nova Ser" Vol LV, No 1				"Dok Akad Nauk SSSR, Nova Ser" Vol LV, No 1	
Describes experiments which show that displacement of pericardial line of growth in region of base of heart towards the periphery and formation of serous pericardial fluid in cavity, are historic processes leading to separation of heart near at its base from its pericardium. Submitted by Academician I. I. Shmal'gauzen, 18 May 1946.		FDB 58T66		Describes detailed research into composition of gushers produced by whales and into the means by which whale expels gusher. Submitted by Academician I. I. Shmal'gauzen, 23 Jun 1946.	
USSR/Medicine - Plants Medicine - Diseases		Jan 1947		USSR/Medicine - Plants Medicine - Physiology	
"The Causes of the Death of Winter Crops in Certain Regions," L. M. Kozhevnikova, 3 pp				"The Fixation of Atmospheric Nitrogen by Means of an Azotobacter in the Presence of Orto-Dinitrobenzene as an Acceptor for Hydrogen," M. V. Fedorov, Lab Plant Physiol and Microbiol, Moscow Agr Acad imeni K. A. Timiryazev, 4 pp	
"Dok Akad Nauk SSSR, Nova Ser" Vol LV, No 1				"Dok Akad Nauk SSSR, Nova Ser" Vol LV, No 1	
Discusses death of winter crops in Penza Oblast which is an almost annual occurrence. Attributes this to presence, in the roots, of some form of fungoid sickness and states that infection of plants takes place in autumn. Submitted by Academician A. A. Rikhter, 3 Aug 1946.		FDB 58T68		Describes experiment which shows that complete loss of azotobacter of free acid does not eliminate its capacity for continuing activity if there are active hydrogen acceptors in medium. Submitted by Academician A. A. Rikhter, 3 Aug 1946.	
USSR/Medicine - Plants Medicine - Metabolism		Jan 1947		USSR/Medicine - Plants Medicine - Physiology	
"The Stopping and Turning Processes of the Formation of Bulbs in Allium Cepa L.," F. E. Reymer, Sci Res Inst, Vegetable Industry, Moscow, 3 1/2 pp				"The Nature of the Action of Leaves Retarding Blossoming," M. Kh. Chaylakhyan, Inst Plant Physiol imeni K. A. Timiryazev, Acad Sci USSR, 4 pp	
"Dok Akad Nauk SSSR, Nova Ser" Vol LV, No 1				"Dok Akad Nauk SSSR, Nova Ser" Vol LV, No 1	
Describes experiments which show that processes leading to formation of bulbs in Allium Cepa are reversible and that stimulus which determines return to previous type of metabolism is produced by green leaves of plant. Submitted by Academician A. A. Rikhter, 8 Aug 1946.		FDB 58T70		Experiments conducted show that substances having special retarding function on blossoming of plants are not formed but are based on action of assimilators of sugars produced in leaves. Submitted by Academician A. A. Rikhter, 18 Oct 1946.	
USSR/Medicine - Morphology Medicine - Ectoderm		Jan 1947		USSR/Medicine - Botany Medicine - Pollen	
"Transformation of the Polarization of the Ectoderm Anura," T. Detlaf, Inst Evolutional Morph imeni A. N. Severtsov, Acad Sci USSR, 4 pp				"Germination Conditions of the Pollen of Oak 'in Vitro'," S. S. Pyatnitskiy, 3 pp	
"Dok Akad Nauk SSSR, Nova Ser" Vol LV, No 1				"Dok Akad Nauk SSSR, Nova Ser" Vol LVI, No 6	
Describes experiments which show that ectoderm Anura has sharply polarized structure in which its heterogeneity and nonreversibility are clearly revealed. Submitted by Academician I. I. Shmal'gauzen, 3 Jul 1946.		FDB 58T72		Describes research on pollen of ten types of oak belonging to various sections of species Cerris. Gives results in tabular form. Submitted by Academician V. N. Sukachev, 19 Dec 1946.	
FDB				FDB	
				58T73	

RESTRICTED	FDB Periodical Abstracts Scientific No 58	RESTRICTED
USSR/Medicine - Fish Medicine - Food	May 1947	USSR/Medicine - Morphology Medicine - Embryology
"Peculiarities in the Feeding of Fish in Reservoirs in the Far North," A. Probatov, 2 pp		"The Action of the Mesectoderms of a Frog in the Determinational Field of Balancers in the Embryos of a Triton," N. I. Dragomirov, Inst Evolutional Morph imeni A. N. Severtsov, Acad Sci USSR, 3 pp
"Dok Akad Nauk SSSR, Nova Ser" Vol LVI, No 6		"Dok Akad Nauk SSSR, Nova Ser" Vol LVI, No 6
Describes research on habits of fish in Far North which shows that goby fish feed intensively during winter and Elegendus Navaga also feeds at this time. Neither fish decreases rate of feeding during spawning period. Submitted by Academician I. I. Shmal'gauzen, 22 Nov 1946.		Describes experiments in which embryos usually developed normally, twin balancers developed in their own places, and too large a medial was set up on account of positive effect of implantation. Submitted by Academician I. I. Shmal'gauzen, 1 Oct 1946.
FDB	58T74	FDB
USSR/Medicine - Plants Medicine - Spermatozoa, Development	May 1947	USSR/Metals Iron - Polymorphism Iron Alloys
"The Development and Structure of Spermatozoa in Crepis," Ye. N. Gerasimova-Navashina, Inst Cytology, Histology, and Embryol, Acad Sci USSR, 4 pp		"Hypothesis on the Classification of Influences of Some Elements on the Polymorphism of Iron," N. N. Sirota, 4 pp
"Dok Akad Nauk SSSR, Nova Ser" Vol LVI, No 6		"Dok Akad Nauk SSSR, Nova Ser" Vol LVI, No 6
Describes study of ontogenesis of spermatozoa with particular reference to process of impregnation in Crepis Capillaris group of plants. Submitted by Academician N. A. Maksimov, 1 Apr 1947.		Deals with connection which exists between chemical properties of an alloy element, in particular its reaction with iron; and influence of element on expansion of the Y area in its binary system with iron. Submitted by Academician I. I. Chernyayev, 12 Nov 1946.
FDB	58T76	FDB
USSR/Metals Crystallography Iron Silicide	Aug 1947	USSR/Metals Steel, Liquid
"The Temperature Function of the Crystallographic Magnetic Anisotropy in Iron Silicide Crystals," I. A. Shubina, Inst Metal Physics, Ural Br, Acad Sci USSR, 3 pp		"Physical and Chemical Processes in Liquid Steel," P. Ya. Ageyev, Candidate Tech Sci, Leningrad Polytech Inst, 5 pp
"Dok Akad Nauk SSSR, Nova Ser" Vol LVII, No 5		"Stal'" No 6
Describes series of experiments, carried out with aid of revolving magnetometer, which determined crystallographic orientation of specimens by X-ray and magnetic methods, and studied temperature component. Submitted by Academician M. A. Leontovich, 3 Mar 1947.		Investigation of physical and chemical processes which occur in liquid metal, particularly those concerned with generation of nonmetallic additions, permits an examination of formation of properties of steel; especially first step, which depends on content of additions. To solve these problems, it is necessary to broaden studies of surface tension on
FDB	58T78	FDB
USSR/Metals Carburization Steel, Cast	Jun 1947	USSR/Metals (Contd)
"Carburization of Liquid Steel for Casting," N. I. Vinogradov, Engr, NTMZ imeni Kuybyshev, 2 pp		liquid metal--a product of chemical reaction, and to work out a method for evaluating this important factor in metallurgical processes.
"Stal'" No 6		
Steel parts, which are cast from soft smelted Martin or electric steel, can be strengthened very simply by addition of carbon or some acidizing material in the casting ladle, according to methods in use at Works imeni Kuybyshev.		
FDB	58T80	FDB
		58T79

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USSR/Metals Fuel - Conservation Coal	Jul 1947	USSR/Metals Steel, Carbon Copper	Jul 1947
"Wetting of Coal Mixtures by Means of Micro-Additions of Anthracite Oil," Prof A. A. Agroskin, Dr Tech Sci, Ye. N. Loskutova, Candidate Tech Sci, Acad Sci USSR, 4 pp		"The Effect of Copper on the Forging, Rolling, and Stamping of Type StKh15 Steel," I. N. Laguntsov, Candidate Tech Sci, NII Bearing Industries, 2 pp	
"Stal'" No 7		"Stal'" No 7	
Effectiveness of wetting coal mixtures, by means of anthracite oil, to coagulate granular material, can be increased by light warming of material added. Effectiveness of mixture also can be increased by fine milling. Wetting oxidizing coals with mixture of anthracite oil and kerosene is most effective.		Use of high-carbon steel, which contains impurities in form of small additions of copper, necessitates auxiliary regulation of heating of steel (temperature, duration of heating, and manner of heating) before it is heat-processed under pressure.	
FDB 58T81		FDB 58T82	
USSR/Metals Annealing Steel, Nickel	Jul 1947	USSR/Minerals Cement Glass	May 1947
"The Effect of the Additions of Aluminum and Boron on the Annealing Quality of Steel," B. Ye. Somin, Candidate Tech Sci, 5 pp		"Theory of Glass-Cement Binding of Crystal Bodies," I. I. Kitaygorodskiy, N. V. Solomin, 2 pp	
"Stal'" No 7		"Dok Akad Nauk SSSR, Nova Ser" Vol LVI, No 6	
Effect of small additions of aluminum on annealing quality of steel depends on type, e.g., it is particularly noticeable on nickel steel. Individual effect of boron, which is derived either from boron anhydride or ferroboreon, is essentially different from effect of complex additions, introduced in amounts equal to amounts of boron.		Explains great stability of a glass-cement body in operation of highly aggressive fusion and its high mechanical qualities in temperature exceeding melting point of glass by several hundred degrees. Submitted by Academician D. S. Belyankin, 23 Dec 1946.	
FDB 58T83		FDB 58T84	
USSR/Mines and Mining Coal	Jul 1947	USSR/Nuclear Physics - Cosmic Rays Nuclear Physics - Particles	Aug 1947
"Chernogor Coals of the Khakassk Coal Beds," I. Ye. Turetskiy, Engr, VNIIT, 1 p		"Genetically Connected Impulses Induced by Cosmic Rays," N. Dobrotin, V. Tsyrlin, Phys Inst imeni P. N. Lebedev, Acad Sci USSR, 3 1/2 pp	
"Stal'" No 7		"Dok Akad Nauk SSSR, Nova Ser" Vol LVII, No 5	
Briefly gives some of characteristics of types of coals mined in Chernogor shafts in Minusinsk rock coal basin, located 18 km from Abakan in Krasnoyarsk Kray. At present, five seams are being worked. Gives no production figures. Analyzes composition of coal.		Describes series of experiments designed to study quantitative correlation between impulses; and discusses characteristics and effect of nonionized particles. Submitted by Academician S. I. Vavilov, 14 May 1947.	
FDB 58T85		FDB 58T86	
USSR/Physics Microscope, Electron Optics, Electronic	Aug 1947	USSR/Physics Luminescence Zinc Sulfide	Aug 1947
"Electron Gun of an Electron Microscope," V. N. Vertsner, State Optical Inst, 3 pp		"Brilliance and Spectral Diffusion of the Glow of Zinc Sulfide Lumiphors With Various Activators," S. A. Fridman, A. A. Cherepnev, T. S. Dobrolyubskaya, Phys Inst imeni P. N. Lebedev, Acad Sci USSR, 3 1/2 pp	
"Dok Akad Nauk SSSR, Nova Ser" Vol LVII, No 5		"Dok Akad Nauk SSSR, Nova Ser" Vol LVII, No 5	
Contains detailed description of electron gun of GOI electron microscope; discusses advantages of not using large quantities of high-voltage current, and includes graphs indicating brilliancy under various conditions. Submitted by Academician A. A. Lebedev, 11 Mar 1947.		Deals with two main characteristics of photoluminescence of ZnS luminophors, i.e., equiponderant brilliance at the time of excitation, and spectral diffusion under similar conditions. Submitted by Academician S. I. Vavilov, 11 Mar 1947.	
FDB 58T87		FDB 58T88	

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<p>RESTRICTED</p> <p>USSR/Physics Flow, Gaseous Mathematics, Applied</p> <p>Aug 1947</p> <p>"On Reducing the Equations of Motion of a Viscous Gas to Quadrature," A. M. Faynzil'ber, 4 pp</p> <p>"Dok Akad Nauk SSSR, Nova Ser" Vol LVII, No 5</p> <p>Gives simple mathematical exposition for reducing ordinary flow equations to simplest integrable forms.</p> <p>FDB 58T89</p>	<p>RESTRICTED</p> <p>USSR/Physics Waves, Ultrasonic Vibration Absorption</p> <p>Jan 1947</p> <p>"Absorption of Ultra-Acoustic Waves in Liquids," S. B. Gurevich, Phys Inst, Leningrad State U, 4 pp</p> <p>"Dok Akad Nauk SSSR, Nova Ser" Vol LV, No 1</p> <p>Quotes Stokes' equation for determining absorption of ultra-acoustic waves in liquids where</p> $d = \frac{2\omega^2\mu}{3\rho\alpha^2}$ <p>and describes experiments giving results which indicate that for every liquid the absorption is greater than those given by Stokes' equation.</p> <p>FDB 58T90</p>
<p>USSR/Physics Surface Tension Isotherms</p> <p>Jan 1947</p> <p>"Physical Chemical Analysis of Binary Liquid Systems, According to the Form of the Isotherms of Surface Tension," N. A. Trifonov, Rostov State U and Kazan Br, Acad Sci USSR, 4 pp</p> <p>"Dok Akad Nauk SSSR, Nova Ser" Vol LV, No 1</p> <p>Describes experiments and research which show that measurement of surface tension, particularly with growing increase in accuracy of methods, can be compared to measurement of internal friction in physical chemical analysis. Submitted by Academician A. Ye. Arbuzov, 25 Jun 1946.</p> <p>FDB 58T91</p>	<p>USSR/Physics Vibration Mathematics, Applied</p> <p>May 1947</p> <p>"Several Particular Cases of a General Problem in the Theory of Vibrations," D. I. Sherman, Inst Mechanics, Acad Sci USSR, 4 pp</p> <p>"Dok Akad Nauk SSSR, Nova Ser" Vol LVI, No 6</p> <p>Contains number of mathematical formulas designed to prove that for any function $u(x, y; \lambda)$ satisfying the equation $\Delta u - \lambda^2 u = 0$,</p> $u(x, y; \lambda) = \operatorname{Re} \left[\frac{1}{\pi i} \int_{\Gamma} v(s, \lambda) \frac{ds}{s} + \sum_{k=0}^{m+n} c_k(\lambda) i^k e_{I_k}(\lambda p) \right]$ <p>FDB 58T92</p>
<p>USSR/Physics Stellar Dynamics Stellar Structure</p> <p>May 1947</p> <p>"Compact Stellar Nuclei and Their Role in Stellar Evolution," L. E. Gurevich, Leningrad State U, 4 pp</p> <p>"Dok Akad Nauk SSSR, Nova Ser" Vol LVI, No 6</p> <p>Describes experiments which prove that rotation of a compact star stops its contraction at different stages, depending on its mass and the moment of the quantity of its movement; and that formation of a compact rotating nucleus has nothing to do with new disintegrations. Submitted by Academician A. F. Ioffe, 20 Dec 1946.</p> <p>FDB 58T93</p>	<p>USSR/Physics Luminescence Phosphors</p> <p>May 1947</p> <p>"Luminescence of Phosphors During Constant Excitation in Absorption Band of the Activator," E. I. Adirovich, Phys Inst imeni P. N. Lebedev, Acad Sci USSR, 4 pp</p> <p>"Dok Akad Nauk SSSR, Nova Ser" Vol LVI, No 6</p> <p>Examines question of whether nonlinear effects are caused only by action of bands of different activators or whether similar effects can also take place in light compositions possessing only one luminescence band.</p> <p>FDB 58T94</p>
<p>USSR/Physics Doppler Effect Atoms</p> <p>May 1947</p> <p>"Doppler Effect at Velocity Greater Than That of Light," V. L. Ginsburg, Phys Inst imeni P. N. Lebedev, Acad Sci USSR, 4 pp</p> <p>"Dok Akad Nauk SSSR, Nova Ser" Vol LVI, No 6</p> <p>Describes experiments which show that supposition that Doppler effect, during movement of an atom in a compact medium, has no value because at this time it will be ionized, is not correct.</p> <p>FDB 58T95</p>	<p>USSR/Physics Phototubes Selenium</p> <p>May 1947</p> <p>"Differential Spectral Phototubes," B. T. Kolomiets, Leningrad Phys Tech Inst, Acad Sci USSR; E. K. Putseyko, State Optical Inst, 2 pp</p> <p>"Dok Akad Nauk SSSR, Nova Ser" Vol LVI, No 6</p> <p>Describes interesting results of experimental work with valve phototubes on introduction of various metals and semiconductors, especially of cadmium, into selenium. Submitted by Academician A. F. Ioffe, 11 Dec 1946.</p> <p>FDB 58T96</p>

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Optics
Light

Oct 1947

"Thirty Years of Soviet Optics," Prof V. L. Levshin,
Dr Phys Math Sci, 4 pp

"Nauka i Zhizn'" No 10

General historical account of 30 years of develop-
ment in Soviet optics. Briefly discusses work in
fields of nature of light and properties of elemen-
tary emissions; spectral study of structure of matter;
optic studies of molecular states and actions of
light; and applied optics, its practical utilization,
and construction of optical instruments.

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USSR/Soil Science
Loess

May 1947

"Some Data on Origin of Loess in the Central Dnepr
Area," Ye. G. Chapovskiy, P. V. Chichagov, All-Union
Sci Res Inst Hydrogeol and Engin Geol, 2½ pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LVI, No 6

Study of field research carried out 1940-1941 on
right bank of Dnepr near towns of Zaporozh'ye and
Nikopol', with particular reference to loess layer
found here. Submitted by Academician B. B. Polynov,
22 Dec 1946.

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List of Abbreviations
used in FDB Periodical Abstracts

ID	Intelligence Division Library
AMC	Air Documents Division, Air Materiel Command
ST	Reference Division, State Department
BM	Bureau of Mines, Department of Interior
BS	National Bureau of Standards
SI	Smithsonian Institution
LC	Library of Congress
FDB	Foreign Documents Branch, CIA
COM	Department of Commerce
AF	A-2 Library, USAF

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